PATENT

Practitioner's Docket No. 21604

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: David A. Culp

Application No.: 10/736,925 Group No.: 3643

Filed: 12/16/2003 Examiner: Timothy D. Collins

For: Improved Apparatus and Method for Aerodynamic Wing

Commissioner for Patents
P. O. Box 1450 Alexandria, VA 22313-1450

Sir:

RESPONSE TO OFFICE ACTION UNDER 37 C.F.R. §1.111 AND REQUEST FOR CONTINUED EXAMINATION

This paper is being filed in response to the Final Official Action mailed 12/01/2005. Reconsideration and continued examination are respectfully requested in light of the amendment and response under the requirements of 37 C.F.R. \$1,111 and the fee required under 37 C.F.R. \$\\$1.114 and 1.17(e), all submitted herein or herewith, and in consideration of the remarks below. Applicant's petition under 37 C.F.R. §§1.136(a) and 1.17(a)(1) for a one month extension of time and the required fee are likewise submitted herewith.

o de la missa, o primi a maiorio, migro e o como **amendment** mos especies a a masso este pelo a come a como especies de la masso e de la masso e per a como especies de la masso e della masso e de la masso e della masso e della

colorgists in the second residence of the configuration, in the configuration of the configuration of the configuration.

In the Claims: The control of the co

Please amend the claims as set forth beginning on page 3 of gregories en l'angent du que l'accus entrepre y grandique la situatable par this correspondence.

REMARKS

Applicant's remarks begin on page 12 of this correspondence.

\\

\\		ing and the state of the state
\\	4*	ado de replace adoptidos de presentados por el 1965. Especialmento de presentados por estados por el contrator A estados sucesados por especial se entra como en presentados por estados en entrator de la contrator de la co Contrator de contrator de la contrator del contrator de la contrator del c
\\		i kaantinin kantas at in hilaksi ka tahta dhaa hilaksi ka kantas ka aantas tutti ikin 1984 in muu ili kuta pik Ili hilaksi uu kyi ahtas kuu setästiksi supulatis etuis oli maghinassa kurjase helja tisa kuu kuisestiin ulatis Ili hilaksi muusa.
//	٠	ිදුල්ලට දැන් මෙය. මෙන්නෙක් පත්තිවේදීම මුංගම දැන් මුංගම් පත් පත්තුර් වැඩ පැමිණ සාන්ත පත්තිවේදීමේ මෙය. එයි. මේ පමණපත්තුමේ පදමුණු මුංදීම් දුරු දුරු නිසාවට මෙන්නෙක් වන්නෙක් එමේදීමේ පත්තිවේදීමේදීම් දුන් මුංගම් මෙයි. එමේදී මෙනෙක් මිනුන් සාවාන්ත පදමුණේ මේවාදීමේ සහ පොඩොක් මෙන් දුල් දුරුණු දිදු දුරුණුම් මෙන්නෙක් මෙන්නේ මිය. මෙන්
\\	i)	ുന്നത്തിലും ഇന്നും ഇത് പ്രവര്യമായിരുന്നും അത്ത്യായിരുന്നും ആവസ്സായത്ത് നെയ്യായിരുന്നും അവരെ നിന്നും വര്യ വര്യ സൂപ്രത്യോഗ്യ സംവര്ധന് അത്യുന്നും ഇതുന്നും നിന്നും വര്യ സ്ഥാനം വര്യ സ്ഥാനം വര്യ വര്യ വര്യ വര്യ അവരെ വര്യ വര്യ സ
//		Free control of the entire territories of the control of the entire territories of the entire te
١١		u sugatu gere a felikiliga est litulogeget at tout toutatuig et la elektraturgu este e periosea kilosta. Litulosas e ganginta foi te estera el elektri un palo y luvalitu publica un atalia de la tributa est interese Litulosas gere in la eskapartog tentra morado, lub rauges, ará tra interese para pala grova el el en interese
//		in Karenge for ye and en was keep in septimise to have been updated by a facility end fool south William in the Heavy meeting for each on the control of the end of the
\\	K!	्रास्त्रक्षक्ष कर्मा क्षेत्रक्षक्षक्षक्षक्षक्षक्षक्षक्षक्षक्षक्षक्षक
//	Ŷ	i anami i king mga mga ko bi ki Bish pilikolikan. A maman malami hi kinami ni miliki mga kamila mana ika mining i Mini Makini kin i gina interi intang mili i i
//		. Appendict restrict in de Minister et la replace de la restraction de period de la place de la participa de l La provincia de Minister et la replace de la replace de la replace de la period de la participa de la particip
//	7	no exportingent of the property of property and the configuration of the expension of the configuration of the solution of the configuration of the solution o
()		A service and the policies of reduced and each of the ball and receipting and the control of all of the control
١,	,	ારુકાન્યું છે. જે જે હતા કુલ કારણ દેવાલાઇક છે. જેવાનું કરા છે કુલ કુલ છે. - જેલા દર્માં લુકો કર્યાલા કુલ છે. છે. જેવાના કારણ કારણ છે. જેવાનું છે. આ તે કે કુલ કુલ કુલો હતા પાત કે જે અને - જેવાના કુલો કર્યાલા કુલો કુલો કારણ હતા હતા છે. જેવાના કુલો કુલો કર્યા છે. જે જેવાના કુલો કુલો હતા હતા કે જે
١١		indepotation di monthi in interestati in transferi della 1800 della compania di segui di consiste di segui di La respectation di transferia di mandia di segui ancia d
· ·	€	in de l'interest particular de la compaction de la compaction de la particular de la compaction de la compac
١١	(*) (*)	ratinal line actività a la completa con esta esta esta esta esta con completa esta esta esta esta esta esta est
, \		कर के मूं के कि
	1707, \$154	ende the desperiment of the state of the sta
11	W44 (14	र प्रकार के राष्ट्रिया के काम्याक प्रकार के प्रकार का प्रकार के के दिस्तान महीन के कि का प्रकार के का का कर्या प्रकार पर की के सम्मान के प्रकार के प्रकार में कि कि का का का प्रकार की कि कि का के स्थाप के स्थाप की कि कि की प्रकार का का कि प्रकार के पर का स्वाकृतिक की कि कि कि का स्थाप की प्रकार का का का का का स्थाप की का का का का क
11	– Darkstos – Wygi No	reformation exclusive statement of a great space of the selection of the property sector of the property of gre On a representation of the contraction of the sector of the restrict of the contraction of the respective of t
//	13.0-51	न्यवर्षते । वेद केंग्नु प्रमुखे एक १० एक्सिकेट केंग्निक एक एक एक प्रमुख प्रमुखेन के क्षेत्रक एक एक एक एक एक एक
ALABOR A DIRECTOR DISEASE A		

- 1. (Canceled)
- 2. (Canceled)
- 3. (Canceled)
- 4. (Canceled)
- 5. (Canceled)
- 6. (Canceled)
- 7. (Canceled)
- 8. (Canceled)
- 9. (Canceled)
- 10. (Canceled)
- 11. (Canceled)
- 12. (Canceled)
- 13. (Canceled)
- 14. (Canceled)
- 15. (Canceled)
- 16. (Canceled)
- 17. (Canceled)
- 18. (Canceled)
- 19. (Canceled)
- 20. (Canceled)
- 21. (Canceled)
- 22. (Canceled)
- 23. (Canceled)
- 24. (Canceled)

- 25. (Canceled)
- 26. (Canceled)
- 27. (Canceled)
- 28. (Canceled)
- 29. (Canceled)
- 30. (Canceled)
- 31. (Canceled)
- 32. (Canceled)
- 33. (Canceled)
- 34. (Canceled)
- 35. (Canceled)
- 36. (Canceled)
- 37. (Canceled)
- 38. (Canceled)
- 39. (Canceled)
- 40. (Canceled)
- 41. (Canceled)
- 42. (Canceled)
- 43. (Canceled)
- 44. (Canceled)
- 45. (New) Wind powered apparatus for transportation modes selected from the group consisting of watercraft, marine structures, skis, sail boards, land vehicles, dirigibles, aircraft, satellites, space craft, and nano-scale vehicles,

the apparatus consisting of:

- at least one single layer aerodynamic wing capable of flying with variable wind direction and angle of attack, without surface discontinuity, without stabilizing lines, without bridles, and without rigid structure, and consisting of a centerline, wingtips, and a tail corner; and
- attachment means linking at least one aerodynamic wing to a transportation mode whereby wing function and transportation mode motion are controlled.
- 46. (New) The apparatus of claim 45, wherein the aerodynamic wing comprises a light weight, three dimensional wing consisting of a plurality of gores of predetermined geometries, defining a large diameter self-supporting rolled-over leading edge of an airfoil, a trailing edge, a nose, an inside windward surface, and an outside leeward surface, whereby all stresses within the wing resulting from aerodynamic forces, gravity, and transient forces due to inertia are converted into tensile stress within the wing and into pure tension transferred to the attachment means, and whereby the wing profile of the wing approaching the trailing edge exhibits increasing convexity.
 - 47. (New) The apparatus of claim 45, wherein the aerodynamic wing comprises a molded single continuous sheet of material, defining a large diameter self-supporting rolled-over

177 ita Saies 24 Mais Paer Gerlierr

leading edge of an airfoil, a trailing edge, a nose,
wingtips, tail corner, an inside windward surface, and an
outside leeward surface, whereby all stresses within the
wing resulting from aerodynamic forces, gravity, and
transient forces due to inertia are converted into tensile
stress within the wing and into pure tension transferred to
the attachment means, and whereby the wing profile of the
wing approaching the trailing edge exhibits increasing
convexity.

- 48. (New) The apparatus of claim 46, wherein attachment means define axes in relation to the wing and transportation mode, and wherein roll and pitch, attitude, altitude, flying speed, angle of attack, internal pressure, and gross shape of the wing, and airflow within, are controlled by independent manipulation of attachment means length.
- 49. (New) The apparatus of claim 48, wherein the wing further consists of at least one variously shaped and sized enclosure containing a lighter than air gaseous mixture.
- 50. (New) The apparatus of claim 49, wherein each enclosure is torpedo shaped consisting of a lightweight, gas impermeable material attached to the wing's centerline or near its nose on the wing's inside surface, and whereby the wing is rendered neutrally or negatively buoyant in air by the enclosure(s).

- 51. (New) The apparatus of claim 50, wherein the wing consists of at least two conjoined vaults or lobes of material with a projecting angle, or groin, between the conjoined vaults or lobes characteristically running partly or completely along or parallel to the wing centerline.
- 52. (New) The apparatus of claim 47, wherein attachment means define axes in relation to the wing and transportation mode, and wherein roll and pitch, attitude, altitude, flying speed, angle of attack, internal pressure, and gross shape of the wing, and airflow within, are controlled by independent manipulation of attachment means length.
- 53. (New) The apparatus of claim 52, wherein the wing further consists of at least one variously shaped and sized enclosure containing a lighter than air gaseous mixture.
- 54. (New) The apparatus of claim 53, wherein each enclosure is torpedo shaped consisting of a lightweight, gas impermeable material attached to the wing's centerline or near its nose on the wing's inside surface, and whereby the wing is rendered neutrally or negatively buoyant in air by the enclosure(s).
- 55. (New) The apparatus of claim 54, wherein the wing consists of at least two conjoined vaults or lobes of material with a projecting angle, or groin, between the conjoined vaults or lobes characteristically running partly or completely along

- or parallel to the wing centerline.
- 56. (New) A three-dimensional, aerodynamic wing capable of flying with variable wind direction and angle of attack, without surface discontinuity, without stabilizing lines, without bridles, and without rigid structure, comprising:
 - a centerline;

wingtips;

- a tail corner; and
- a plurality of gores of predetermined geometries, defining a large diameter self-supporting rolled-over leading edge of an airfoil, a trailing edge, a nose, an inside windward surface, and an outside leeward surface, whereby all stresses within the wing resulting from aerodynamic forces, gravity, and transient forces due to inertia are converted into tensile stress within the wing, and whereby the wing profile of the wing approaching the trailing edge exhibits increasing convexity.
- 57. (New) A three-dimensional, aerodynamic wing capable of flying with variable wind direction and angle of attack, without surface discontinuity, without stabilizing lines, without bridles, and without rigid structure, comprising:

a centerline;

wingtips;

a tail corner; and

- a molded single continuous sheet of material, defining a large diameter self-supporting rolled-over leading edge of an airfoil, a trailing edge, a nose, an inside windward surface, and an outside leeward surface, whereby all stresses within the wing resulting from aerodynamic forces, gravity, and transient forces due to inertia are converted into tensile stress within the wing, and whereby the wing profile of the wing approaching the trailing edge exhibits increasing convexity.
 - 58. (New) An aerodynamic, three dimensional kite capable of flying with variable wind direction and angle of attack, without surface discontinuity, without stabilizing lines, without bridles, and without rigid structure, to replace downwind and cross wind sails on a sailing craft having at least one mast, comprising:
 - a centerline;
 - a plurality of tips;
 - a tail corner;
 - a plurality of gores of predetermined geometries, defining a large diameter self-supporting rolled-over leading edge of an airfoil, a trailing edge, a nose, an inside windward surface, and an outside leeward surface, whereby all stresses within the kite resulting from aerodynamic forces, gravity, and transient forces due to inertia are converted

POSTER OF THE PROPERTY AND THE STREET, THE STREET, THE STREET, THE STREET, THE STREET, THE STREET, THE STREET,

THE YOUR RESERVED AND THE DEBUG WAS CHARACTED A METEROLISM.

into tensile stress within the kite, and whereby the profile of the kite approaching the trailing edge exhibits increasing convexity; and

attachment means linking kite tips to points on the sailing craft other than a mast whereby kite function and sailing craft motion are controlled.

- 59. (New) The kite apparatus of claim 58, wherein attachment means comprises three flexible flying lines of predetermined adjustable length, each flying line comprising two ends, wherein for each flying line one end is affixed to a unique kite tip and the other end is affixed to a unique point on the sailing craft.
 - O. (New) The kite apparatus of claim 59, wherein the flying lines further define three axes in relation to the kite and sailing craft, and wherein roll and pitch, attitude, altitude, flying speed, angle of attack, internal pressure, and gross shape of the kite, and airflow within, are controlled by independent manipulation of flying line length.
 - of gores are secured and connected to form the three dimensional kite by first adhesively securing jointures between edge-to-edge gores using double-sided adhesive means, then sewn using flat overlapping seams and a zigzag

HE RESIDENCE AND THE SERVICE STATES OF STREET

sewing stitch.

- 62. (New) The kite apparatus of claim 59, wherein the kite further consists of at least one variously shaped and sized enclosure containing a lighter than air gaseous mixture.
- 63. (New) The kite apparatus of claim 62, wherein each enclosure is torpedo shaped consisting a lightweight, gas impermeable material attached to the kite's centerline or near its nose on the kite's inside surface, and whereby the kite is rendered neutrally or negatively buoyant in air by the enclosure(s).
- 64. (New) The kite apparatus of claim 63, wherein the kite further comprises of at least two conjoined vaults or lobes of material with a projecting angle, or groin, between the conjoined vaults or lobes characteristically running partly or completely along or parallel to the wing centerline.
- 65. (New) An aerodynamic, three dimensional kite capable of flying with variable wind direction and angle of attack, without surface discontinuity, without stabilizing lines, without bridles, and without rigid structure to replace downwind and cross wind sails on a sailing craft, comprising:
 - a centerline;
 - a plurality of tips;
 - a tail corner;

V Mortinger - Messistical and reposed statute of estimations

- a molded single continuous sheet of material, defining a large diameter self-supporting rolled-over leading edge of an airfoil, a trailing edge, a nose, an inside windward surface, and an outside leeward surface, whereby all stresses within the kite resulting from aerodynamic forces, gravity, and transient forces due to inertia are converted into tensile stress within the kite, and whereby the kite profile approaching the trailing edge exhibits increasing convexity; and
 - attachment means linking kite tips to points on the sailing craft other than a mast whereby kite function and sailing craft motion are controlled.
 - 66. (New) The kite apparatus of claim 65, wherein attachment means comprises three flexible flying lines of predetermined adjustable length, each flying line comprising two ends, wherein for each flying line one end is affixed to a unique kite tip and the other end is affixed to a unique point on the sailing craft.
 - 67. (New) The kite apparatus of claim 66, wherein the flying lines further define three axes in relation to the kite and sailing craft, and wherein roll and pitch, attitude, altitude, flying speed, angle of attack, internal pressure, and gross shape of the kite, and airflow within, are controlled by independent manipulation of flying line

,是,这一直不知为为事,以为为了违法的证据,即任知证的。因为分别或是一个知识。 化环烷 人民行政的 超光 计二十字卷 计多数逻辑程序

ville i speki i secilisteki kometanti kometanji i kepitali kalenda i kalendari k

length. Tweethouse we was a section of the control of the control

- 68. (New) The kite apparatus of claim 66, wherein the kite further consists of at least one variously shaped and sized enclosure containing a lighter than air gaseous mixture.
- 69. (New) The kite apparatus of claim 68, wherein each enclosure is torpedo shaped consisting a lightweight, gas impermeable material attached to the kite's centerline or near its nose on the kite's inside surface, and whereby the kite is rendered neutrally or negatively buoyant in air by the enclosure(s).
- 70. (New) The kite apparatus of claim 69, wherein the kite further comprises of at least two conjoined vaults or lobes of material with a projecting angle, or groin, between the conjoined vaults or lobes characteristically running partly or completely along or parallel to the wing centerline.

THE LONG WAS A PROPERTY OF THE CONTRACT OF THE PROPERTY OF THE

130 90% 25%

M Go C oper - Empire Dos Are Dealgre Colonic from Selection

rostelej (1918 in serve rot to la di lecture en esta esta lecture en combinario esta Casallera

REMARKS

Request for Information under 37 C.F.R. §1.105

In the Office Action, the Examiner continued the prior request for required information under 37 C.F.R. \$1.105. The Examiner's request in this regard was for the following information:

- "i. Where exactly was the invention tested?
 - (1) What body of water was it used on, and where on the body of water? Coordinates or locations with respect to bodies of land are needed.
 - (2) When exactly was the device tested prior to December 19, 2002? Specific dates are needed.
 - (3) Who saw the testing being performed?
- (4) What did the 'testing' and 'experimentation' consist of?
 - (5) Was any instance of the invention sold? For example was any <u>specific single sail</u> sold or offered for sail?" [Detailed Office Action, page 3

Applicant files a supplemental declaration concurrently with this amendment and response, and incorporates herein by reference the statements of fact therein.

In pertinent part, these facts address the specific requests for additional information set forth above.

Additionally, Exhibits A-1, A-2, A-3, B-1 and B-2 provide

Tobel Elegano el cual foldante adviso de la jour de la composito de velocial ad F

journalism entries as to the first public use of the present invention on 12/17/2002 and subsequent public use on 12/18/2002 in New Zealand.

Information Disclosure Statement

The Examiner's statement about non-patent and foreign patent references provided by the Applicant within the specification and/or in the previously filed Forms PTO/SB/08a and 08b are noted.

Claim Rejections - 35 U.S.C. § 102

The Examiner rejected Applicant's claims 1 - 5, 11 - 18, 31, 32 and 35 - 44 under 35 U.S.C. § 102(b).

Applicant has cancelled claims 1 - 44.

Filed with this amendment and response, and request for reexamination are new claims 45 - 70. Applicant respectfully
submits Applicant's supplemental declaration and the abovepresented new claims 45 - 70 remove any anticipation by either
Kiteship 1 or U.S. Patent No. 4,296,704 to Briggs ("the '704
Patent").

Claim Rejections - 35 U.S.C. §103(a)

The Examiner has rejected claims 15 - 18 as being unpatentable over Kiteship 1 and/or in view of the '704 Patent.

Applicant has cancelled claims 1 - 44.

Filed with this amendment and response, and request for reexamination are new claims 45 - 70. Applicant respectfully submits Applicant's supplemental declaration and the above-presented new claims 45 - 70 remove Kiteship 1 and/or the '704 Patent as 35 U.S.C. \$103(a) references.

CONCLUSION

For all the reasons advanced above, applicant respectfully submits that the application is in condition for continued examination and allowance, and those actions are earnestly solicited.

Dated: March 24, 2006.

Respectfully submitted, /Charles L. Thoeming/ Charles L. Thoeming Registration No. 43,951 Customer No. 27015

Enclosures: 1) Form PTO/SB/21

- 2) Form PTO/SB/30
- 3) Form. PTO/SB/22
- 4) Supplemental Declaration of David A. Culp with Exhibits A-1, A-2, A-3, B-1, and B-2 [16 pages]

BIELEN, LAMPE & THOEMING, P.A.
1390 Willow Pass Road.
Suite 1020
Concord, CA 94520
(925)288.9720
(925)288.9731 Facsimile
hadvbaxen@earthlink.net
ATTORNEYS FOR APPLICANT
\\
\\
\\

Certificate of Filing by EFS-Web

I hereby certify that this correspondence and all related papers and referenced enclosures are being filed with the United States Patent and Trademark Office by the Patent Application and Document Submission System entitled EFS-Web under a transmittal sheet addressed to: Commissioner for Patents, P. O. Box 1450, Alexandria, VA 22313-1450, on March 24, 2006.

/Charles L. Thoeming/
Charles L. Thoeming, Registered
Representative of Applicants
March 24, 2006
Date of Signature